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NEW DAY IN MEDICINE**

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## A MODERN APPROACH TO CHANGES IN THE FACE-JAW SYSTEM IN DENTURES

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### ✓ Resume

*Among the problems of orthopedic dentistry, features of repeated prosthetics in patients with complete loss of teeth occupy an important place. After completing orthopedic treatment, patients, as a rule, are immediately satisfied with the results, if there are no obvious signs of changes in the organs and tissues of the maxillofacial region or the prostheses themselves, they do not visit the doctor for a long time. The reasons for treating patients in the clinic in the nearest time after prosthetics are, as a rule, errors in treatment: balancing prostheses, failure to fix them, the presence of holes and cracks. This is confirmed by the results of studies published by a number of authors.*

*Keywords. Prosthetics, maxillofacial, pathology, injury, cheekbone.*

## СОВРЕМЕННЫЙ ПОДХОД К ИЗМЕНЕНИЮ ЧЕЛЮСТНО-ЛИЦЕВОЙ СИСТЕМЫ В ЗУБНЫХ ПРОТЕЗАХ

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### ✓ Резюме

*Среди проблем ортопедической стоматологии важное место занимают особенности повторного протезирования у больных с полной потерей зубов. После завершения ортопедического лечения пациенты, как правило, сразу же остаются довольны результатами, при отсутствии явных признаков изменений в органах и тканях челюстно-лицевой области или самих протезах долго не обращаются к врачу. Причинами обращения больных в клинику в ближайшие сроки после протезирования являются, как правило, ошибки в лечении: балансировка протезов, невозможность их фиксации, наличие отверстий и трещин. Это подтверждается результатами исследований, опубликованными рядом авторов.*

*Ключевые слова. Протезирование, челюстно-лицевой, патология, травма, скула.*

## PROTEZLARNI KULLASHDA YUZ-JAG' TIZIMIDAGI UZGARISHLARGA ZAMONAVIY YONDASHUV

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### ✓ Rezyume

*Ortopedik stomatologiya muammolari orasida tishlari to'liq yo'qolgan bemorlarda takroriy protezlash xususiyatlari muhim o'rin tutadi. Ortopedik davolanishni tugatgandan so'ng, bemorlar, qoida tariqasida, natijalardan darhol qoniqishadi, agar jag'-fasial mintaqaning a'zolari va to'qimalarida yoki protezlarda o'zgarishlarning aniqlanishi bo'lsa, ular shifokorga murojaat qilishmaydi. uzoq vaqt. . Protezlashdan keyin yaqin kelajakda klinikada bemorlarni davolashning sabablari, qoida tariqasida, davolanishdagi xatolar: protezlarni muvozanatlash, ularni tuzatishning mumkin emasligi, teshiklar va yoriqlar mavjudligi. Buni bir qator mualliflar tomonidan chop etilgan tadqiqotlar natijalari tasdiqlaydi.*

*Kalit so'zlar. Protezlash, maxillofasiyal, patologiya, travma, yonoq suyagi.*

## Relevance

Modern medicine has made great strides in the treatment of neoplasms of the maxillofacial region. According to the statistics of a number of authors, tumors in this area account for about 15% of dental diseases and up to 25% of all human neoplasms. At the same time, tumors of the upper jaw are approximately three times more common than those of the lower jaw (Kabakov B.D. et al., 2018). In men, malignant tumors of this localization are observed more often than in women, mainly at the age of 40–60 years [3].

Acquired defects of the upper jaw are also formed as a result of gunshot wounds, injuries, complications of various diseases and are divided according to the shape, size, condition of the surrounding tissues, preservation or absence of teeth. Among them, there are defects in the alveolar part, hard and soft palate with and without penetration into the maxillary sinus, as well as defects formed after complete resection of the right or left upper jaw, or resection of both. To determine the group affiliation of the defect of the upper jaw, various classifications of Gorbanev-Timofeev L.V. are used, with additions by Kostur B.K. and Minyaeva V.A. (1985), Slepchenko M.A. (1974), Aramany MA (1978), Sysolyatin P.G. (2001), JSBrown (2007) and others [2].

Negotiability for the purpose of recovery after surgical defects of the upper jaw has increased markedly. The task of orthopedic treatment of this group of patients is to restore the patient's appearance, speech, chewing and swallowing functions, preserve the remaining teeth, prevent injury to the edges of the postoperative defect and atrophy of the tissues of the prosthetic bed.

to achieve effective results of prosthetics and the fastest possible social adaptation of the patient only if the orthopedic dentist works closely with the maxillofacial surgeon, joint planning of the scope of intervention, further prosthetics and rehabilitation. In this case, prosthetics can be carried out at different times after surgery. The greatest positive result gives direct prosthetics. This is due to the fact that the application of the prosthesis before the wound heals gives the effect of a postoperative dressing, and the scar that forms according to the shape of the inner part of the prosthesis forms a prosthetic bed, which contributes to a good fixation of the structure in the future. [5] Early prosthetics also enables the dentist to achieve optimal fixation of the maxillofacial prosthesis and restore lost functions as soon as possible after surgery [6]. When planning prosthetics in the long term, it can be difficult to achieve the desired results, since it is necessary to deal with already formed scar tissues and bands in the area of the postoperative defect, which does not allow for reliable fixation and the prosthesis can be displaced at the time of function [5]. Restriction of mouth opening complicates the ongoing manipulations, and the peculiarity of the psychological state in such patients does not give a positive attitude and confidence in the success of the treatment [9].

Restoration of speech, the possibility of independent eating and restoration of the patient's appearance in the short term after surgery should be a priority when choosing methods of direct and early maxillofacial prosthetics.

The choice of design and method of treatment depends on the volume of surgical intervention, the cause, and topography, the size of the postoperative defect, the number of remaining teeth and the condition of the tissues of the prosthetic bed. [8].

In more remote periods, repeated prosthetics are carried out mainly due to a decrease in the therapeutic and prophylactic properties of prostheses.

Observations of the results of re-prosthetics performed using a calotte and or volumetric modeling showed that the fixation of new prostheses was always higher than that of old ones. Patients quickly got used to them, without complaining of muscle fatigue, chattering of teeth and any other unpleasant sensations. After prosthetics, 18 patients were called for re-examination at various times after treatment. At the same time, it turned out that all these patients use prostheses well, freely bite and chew a variety of food they eat. The maceration in the area of the corners of the mouth that existed before the re-prosthesis in 5 patients disappeared. In one patient, after prosthetics, pain in the temporomandibular joint disappeared, and in 7 patients who complained of speech impairment, it recovered [12].

An analysis of literature data and the results of our studies show that the reasons for repeated prosthetics are most often the inability to use prostheses due to poor fixation, deterioration in chewing efficiency due to abrasion of plastic teeth, a decrease in the interalveolar height and lower third of the face, pain in the temporomandibular joints, impaired speech clarity and aesthetics. Changed conditions in the mouth (atrophy of the alveolar processes, changes in the shape and width of the alveolar arches, flattening of the



palate, a change in the position of the transitional fold, etc.) require structural changes in new prostheses. It follows that the tactics of the doctor during repeated prosthetics should be different from the one that is followed during the initial treatment of the patient [10].

In the process of using complete removable dentures with plastic teeth, under the influence of chewing, their occlusal surfaces are gradually erased. This contributes to a tighter closure of the dentition, provides a smooth sliding of the lower dentition over the top, the stability of the prosthesis and the improvement of the function of chewing, speech, temporomandibular joints, muscles of the maxillofacial region. However, further tooth wear leads to a decrease in the interalveolar height, as a result of which the appearance of the face changes, the volume of the oral cavity decreases, the act of chewing, speech, and the function of the temporomandibular joints are disturbed [11].

In such cases, as a rule, new prostheses are made without taking into account the features of the old ones. Patients get used to them again for a long time, and if this does not happen, they refuse them, continuing to use the old ones, which leads to aggravation of dysfunctional states of the masticatory apparatus. Features of the tactics of repeated prosthetics relate primarily to the feasibility and possibility of changing the interalveolar height in patients who use prostheses for a long time, with a decrease in this parameter changes in the shape and width of the artificial dental arch expansion of the boundaries of the prosthetic base and variations of its shape. Therefore, the restoration of the interalveolar height in old prostheses, if for other reasons they do not require alteration, is the most urgent problem in practical dentistry [6].

Prosthetics in patients of this group has another feature that has not been paid attention to in the domestic literature. We have in mind the psychophysiological side of the issue, which consists in the fact that patients who use removable dentures for a long time develop persistent habits, the change of which is the more difficult the older they get.

Obviously, if a new prosthesis is installed without prior preparation, it will be perceived as a completely foreign body and the adaptation period can last a very long time. Which are located along its outer contour. If, however, a new, modified prosthesis is installed in this functional system, the system will perceive it as another, foreign body. The duration of the new period of adaptation depends on the age of the patient and the time of using the old prosthesis.

The effectiveness of prosthetics in patients with acquired defects of the lower jaw to a large extent depends on the etiology, topography and extent of the defect in the lower jaw, as well as changes in the mucous membrane.

In the modern world, the approach to the replacement of defects in the lower jaw has changed significantly. Successfully performed osteoplastic surgeries make it possible to obtain an optimal prosthetic bed for prosthetics.

However, the traditional orthopedic treatment of patients with dental prostheses with polymer bases is not always effective, this is due to the occurrence of functional overloads of the tissues of the prosthetic bed, when biting off and chewing food. The load falls through the artificial teeth on the base or frame of the prosthesis, which leads to the occurrence of a deflection zone under the saddle or base. In the zone of load concentration, tension arises not only in the soft tissues, but also in the bone around the graft or implant, which leads to disruption of tissue trophism and their atrophy in the future, as well as scarring of the mucosa.

To avoid the above complications, Astashina proposed an alternative method of prosthetics for patients, dentoalveolar prostheses with different thickness solid titanium frames after plastic preparation of the prosthetic bed. The use of this design prevents the occurrence of functional tissue overload.

The technique for manufacturing such a design consists in taking an impression, making and analyzing diagnostic models, planning the design of the prosthesis in accordance with the recommendations of the maxillofacial surgeon. Next, a plaster working model is made, and an individual spoon is made according to it, and its fitting in the oral cavity. The boundaries of the spoon are clarified visually, and then, with the help of functional tests, fixation is achieved. A functional impression is obtained with alginate or silicone impression materials, the choice of which is based on the compliance of the mucous membrane. To form volume, the edges of the working print are edged [11].

In the future, there are stages - obtaining a functional impression from the lower jaw and anatomical from the upper jaw, making working models from supergypsum, determining the central occlusion or the central ratio of the jaws. With microstomy, it is necessary to use wax templates with rigid bases. The dental prosthesis is constructed in the articulator, and the spatial arrangement of the jaws is determined by the upper jaw and transferred by means of the facial arch.

The main difference between the creation of a prosthesis of different thicknesses with titanium frames

lies in the features of the stage of formation of the wax composition. According to the standards, the thickness of the saddle part is 0.5 mm, and the dimensions of the arc are 4.0x2.0 in diameter, while the edge of the base is edged with a wax blank in the form of a cord with a diameter of 0.8 mm [2].

When modeling the frame or base of the prosthesis to replace a defect, it is rational to increase their thickness to 2.0-2.5 mm in the following areas: in the region of the saddle located above the graft or implant, as well as in the transition zone of the construction saddle into the arch. The edge of the base limiter must be edged with a wax blank with a diameter of 1.0-1.2 mm. This approach provides a reduction in the level of developing functional stresses in the area of the graft or implant. Since the titanium alloy has a low specific gravity, such an increase in the volume of the framework of the structure does not adversely affect the function of the dentoalveolar system.

Among the problems of orthopedic dentistry, an important place is occupied by the features of repeated prosthetics in patients with complete loss of teeth. After the completion of orthopedic treatment, patients, as a rule, satisfied with the immediate results, do not visit the doctor for a long time if there are no obvious signs of changes in the organs and tissues of the maxillofacial region or the prostheses themselves. The reasons for the treatment of patients in the clinic in the nearest time after prosthetics, as a rule, are errors in treatment: balancing of prostheses, violation of their fixation, the presence of pores and cracks in the base. This is confirmed by the results of studies published by a number of authors [1, 2, 3].

### Conclusion

In more distant terms, repeated prosthetics are carried out mainly due to a decrease in the therapeutic and prophylactic properties of prostheses.

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